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TITLE: DIELECTRIC RESONATOR AND DIELECTRIC FILTER

PUBN-DATE: March 6, 2001

INVENTOR-INFORMATION:

NAME	COUNTRY
KO, SAIKO	N/A
FURUTA, ATSUSHI	N/A
ISOMURA, AKIHIRO	N/A

ASSIGNEE-INFORMATION:

NAME	COUNTRY
TOKIN CORP	N/A

APPL-NO: JP11233683

APPL-DATE: August 20, 1999

INT-CL (IPC): H01P001/208, H01P001/20 , H01P001/205 , H01P007/10

ABSTRACT:

PROBLEM TO BE SOLVED: To provide a triple-mode dielectric resonator with a very small and simple configuration and a dielectric filter using such a dielectric resonator.

SOLUTION: This dielectric resonator 10, which has three faces formed by scraping away three edges parts sharing one point of a dielectric block and other three faces respectively adjoining one another and

forming a face 2b by scraping away another edge that is not parallel with the
edge is arranged in a cutoff waveguide 3, and a dielectric filter is
constructed by providing bar-shaped antennas 8 whose one end is in open state
and input-output terminals 9 as an energizing means. Miniaturization and cost
reduction can be achieved since characteristics corresponding to a three-stage
filter can be obtained by using only one dielectric block 1.

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ABSTRACT:

PROBLEM TO BE SOLVED: To materialize a dielectric resonator which reduces the number of dielectric resonators, is miniaturized, realizes cost reduction and is also excellent in an extraband characteristics.

SOLUTION: One triple mode dielectric resonator combining three resonation modes of a dielectric block 1 by forming a face 2a by scraping away one edge of block 1 having a substantially rectangular parallelepiped shape and also

where an angle made
between a scraped face and its adjoining face ranges
between 40 and 50 degrees
and the area ratio of the scraped face to the adjoining
face ranges between 1
and 200%, is installed in a hollow shield case 21 being of
an almost
rectangular parallelepiped shape, and is provided with
supplying and receiving
electric probes 24 and 25 to construct a dielectric filter.

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A practical triple-mode monoblock bandpass filter base station applications

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Abstract:
A practical triple-mode dielectric monoblock band pass filter integrated with a bandwidth pre-select mask bandpass filter and a microstrip low pass filter for WCDMA base station application is presented. The dielectric monoblock triple-mode filter was designed and optimized using 3D EM simulation softwa incorporating the equivalent circuit model. The pre-select filter and low pass were used to clean up the spurious response of the triple-mode filter up to 12 Both triple mode and mask filters are directly mounted on the PCB to minimiz cost and loss

Index Terms:
band-pass filters code division multiple access dielectric losses equivalent circuits microwave filters passive filters waveguide filters 0 to 12 GHz 3D EM simulation sof WCDMA base station applications cost dielectric filters equivalent circuit model los microstrip low pass filter pre-select mask bandpass filter spurious response triple-mo monoblock bandpass filter

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